



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/813,352	03/21/2001	Luis Lopez-Molina	2312-109	3472

6449 7590 10/22/2002

ROTHWELL, FIGG, ERNST & MANBECK, P.C.
1425 K STREET, N.W.
SUITE 800
WASHINGTON, DC 20005

EXAMINER

COLLINS, CYNTHIA E

ART UNIT	PAPER NUMBER
----------	--------------

1638

DATE MAILED: 10/22/2002

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/813,352

Applicant(s)

LOPEZ-MOLINA ET AL.

Examiner

Cynthia Collins

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 1-25 and 32-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group VI, claims 25-31, in Paper No. 6 is acknowledged. Claims 1-25 and 32-36 are withdrawn from consideration as being directed to nonelected inventions. The requirement is still deemed proper and is therefore made FINAL.

Information Disclosure Statement

An initialed and dated copy of Applicant's IDS form 1449, filed August 8, 2001, Paper No. 4, is attached to the instant Office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 25-31 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a written description rejection.

The claims are drawn to a seed, seedling or plant which is transgenic for *ABI5*, including a seed, seedling or plant that overproduces *ABI5*, a seed, seedling or plant that is hypersensitive to abscisic acid, a seed, seedling or plant that is resistant to drought, and a seed, seedling or plant that is resistant to high salt.

The specification describes *Arabidopsis* plants transformed with a polynucleotide encoding ABI5 under the control of the CaMV 35S promoter, said plants exhibiting increased levels of ABI5 and increased sensitivity to abscisic acid induced inhibition of seed germination and root growth relative to nontransformed *Arabidopsis* plants (page 15, Figure 5A and Figure 5B). The specification also indicates that the polynucleotide encoding ABI5 was obtained from *Arabidopsis* and that ABI5 is a putative transcription factor of the basic leucine zipper family, although the structure of the polynucleotide is not explicitly disclosed in the specification (page 1). This does not constitute a substantial portion of the genus that comprises *ABI5* genes which increase hypersensitivity to abscisic acid and resistance to drought and high salt when expressed in a transgenic seed, seedling or plant. The claimed genus encompasses a multitude of different nucleotide sequences, including those yet to be discovered. The disclosure that an *ABI5* polynucleotide obtained from *Arabidopsis* confers increased sensitivity to abscisic acid induced inhibition of seed germination and root growth when expressed in transgenic *Arabidopsis* seeds and seedlings does not provide an adequate description of the claimed genus, and in view of the level of knowledge and skill in the art, one skilled in the art would not recognize from the disclosure that the applicant was in possession of the claimed genus (see Written Description Guidelines, Federal Register, Vol. 66, No. 4, January 5, 2001, pages 1099-1111).

Claims 25-31 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a seed, seedling or plant transgenic for an *ABI5* polynucleotide obtained from *Arabidopsis* (GenBank Accession AC006921) that overproduces the encoded *Arabidopsis* ABI5 polypeptide and that exhibits increased sensitivity to abscisic acid induced inhibition of

Art Unit: 1638

seed germination and root growth relative to nontransformed *Arabidopsis* plants, does not reasonably provide enablement for a seed, seedling or plant transgenic for any *ABI5* polynucleotide and that is resistant to drought stress or salt stress. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The claims are drawn to a seed, seedling or plant which is transgenic for *ABI5*, including a seed, seedling or plant that overproduces *ABI5*, a seed, seedling or plant that is hypersensitive to abscisic acid, a seed, seedling or plant that is resistant to drought, and a seed, seedling or plant that is resistant to high salt.

The specification discloses *Arabidopsis* plants transformed with an *ABI5* polynucleotide obtained from *Arabidopsis* (GenBank Accession AC006921) encoding an *Arabidopsis* *ABI5* polypeptide under the control of the CaMV 35S promoter (page 15). In the absence of abscisic acid, *Arabidopsis* plants transgenic for the *Arabidopsis* *ABI5* exhibit *ABI5* levels five times greater than the *ABI5* levels of nontransformed abscisic acid induced *Arabidopsis* plants (page 15). Germination of *Arabidopsis* seeds transgenic for *Arabidopsis* *ABI5* also exhibit increased sensitivity to abscisic acid induced inhibition of seed germination and root growth relative to nontransformed *Arabidopsis* plants (page 15, Figure 5A and Figure 5B). The specification does not disclose whether seed, seedlings or plants that are transgenic for *Arabidopsis* *ABI5* are resistant to drought or to high salt as compared to nontransgenic seed, seedlings or plants.

While one of skill in the art could readily make seed, seedlings or plants that are transgenic for any *ABI5* polynucleotide, it would require undue experimentation for one skilled in the art to determine how to express a polynucleotide encoding *ABI5* such that the transgenic

Art Unit: 1638

seed, seedlings or plants would be resistant to drought or high salt, because the ability of such a polynucleotide to confer drought or high salt resistance to transgenic seed, seedlings or plants is unpredictable. For example, it may not be possible to confer drought or stress resistance on a transgenic plant by overproducing ABI5 if ABI5 is not directly or indirectly involved in mediating drought or high salt resistance. Alternatively, it may be necessary to express ABI5 at a certain time in plant development, or in a particular tissue or tissues, in order to confer drought or stress resistance on a transgenic plant. The specification does not provide sufficient guidance for one skilled in the art to determine how to express a polynucleotide encoding ABI5 such that resistance to drought or high salt is conferred, because the specification does not disclose any seed, seedling or plant that is transgenic for *ABI5* and that is resistant to drought or high salt as compared to a nontransformed plant. Furthermore, while one of skill in the art could readily make seed, seedlings or plants that are transgenic for any *ABI5* polynucleotide, it would require undue experimentation for one skilled in the art to determine which *ABI5* polynucleotide to express such that the transgenic seed, seedlings or plants would exhibit increased sensitivity to abscisic acid induced inhibition of seed germination and root growth relative to nontransformed *Arabidopsis* plants, because the ability of such a polynucleotide to increase sensitivity to abscisic acid induced inhibition of seed germination and root growth is unpredictable. The specification does not provide sufficient guidance for one skilled in the art to determine which *ABI5* polynucleotide to express, because the specification only discloses the effect of expressing a single *ABI5* polynucleotide, an *ABI5* polynucleotide obtained from *Arabidopsis* (GenBank Accession AC006921).

Art Unit: 1638

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 28-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 25-28 are indefinite in the recitation of "ABI5", as the meaning of the acronym "ABI5" is unclear.

Claim 25 is indefinite in the recitation of "transgenic for ABI5". Does Applicant mean that the gene for ABI5 has been inserted into the plant?

Claims 26 and 27 are indefinite in the recitation of "gene". The word gene implies DNA existing in nature that includes coding regions and noncoding regions, such as enhancers, promoters, and introns. It is suggested that the claims be amended to recite "isolated polynucleotide" or "isolated nucleic acid" rather than "gene".

Claim 27 is indefinite in the recitation of "activatable". It is unclear what would activate the promoter. Does "activatable" mean that the promoter is inducible?

Claim 28 is indefinite in the recitation of "overproduces", as "overproduces" is a relative term that lacks a comparative basis.

Claim 29 is indefinite in the recitation of "hypersensitive", as "hypersensitive" is a relative term that lacks a comparative basis.

Claims 30 and 31 are indefinite in the recitation of "resistant", as "resistant" is a relative term that lacks a comparative basis.

Application/Control Number: 09/813,352
Art Unit: 1638

Page 7

Claim 31 is indefinite in the recitation of "high", as "high" is a relative term that lacks a comparative basis.

Remarks


No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Collins whose telephone number is (703) 605-1210. The examiner can normally be reached on Monday-Friday 8:45 AM -5:15 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on (703) 306-3218. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

CC
October 20, 2002


PHUONG T. BUI
PRIMARY EXAMINER